APPENDIX B

Procedure Assessment

This appendix summarizes the results of the assessment questionnaire that was administered at the end of the data collection period to all available participating Investigating Officers. A copy of the questionnaire follows the discussion of the assessment results.

Value of Training

Using a scale of 1 (poor) to 5 (excellent), Investigating Officers were asked to rate the project training on four factors: (1) explaining the purpose of the forms; (2) describing what information to collect; (3) describing how to complete the forms; and (4) preparing IOs for this additional role. Of the 14 IOs surveyed, 10 indicated they had taken part in the initial full-day training session. Average ratings for each of the four factors ranged between 3.7 and 4.1, suggesting that the initial training was fairly useful to all of those who received it. Among those who could not attend the initial full-day training session, four IOs indicated they received some form of training from their colleagues at their MSO. Their average ratings for that training, using the same four factors as above, were slightly lower, ranging between 3.5 and 4.0. Thus, it appears that the initial full-day training adequately prepared IOs for their responsibilities in this study, including the training of other IOs who were unable to attend the initial training.

Usability of the Investigation and Reporting Procedures

The usability of material supporting the investigation and reporting procedures was assessed for: (1) the *Instructions for Completing and Sending of All Forms;* (2) the *Screening and Background Form;* and (3) the *Communications Reporting Forms.* Although all respondents received a copy of the instructions, IOs did not typically consult it on a regular basis during either the investigation or reporting of a casualty. Seventy-one percent of the IOs reported referring to the instructions less than half of the time during an investigation, and 64 percent reported referring to them less than half of the time while completing the forms. When asked to rate the instructions on their ease of use and value in the investigating and reporting process on a scale of 1 (poor) to 5 (excellent), IOs gave them moderate ratings, with average ratings ranging between 3.0 and 3.6. Each of the forms was also rated on its ease of use and value, using the same five-point scale. Both forms received moderate ratings, with averages ranging between 3.3 and 3.5.

When asked to judge the two-step investigation approach (i.e., first determining whether a case was a critical human factors case with potential for communications contribution, then collecting communications information), 11 of the 14 IOs rated it as Useful, Very Useful, or Extremely Useful. When rating the benefit of these procedures and forms to the investigation and reporting of human factors and communications-related information, IOs gave the procedures an average rating of 3.3 on a scale of 1 (poor) to 5 (excellent). Suggestions for improving the investigation and reporting process included streamlining the screening process, extending the data collection period to allow more time to process case forms, and providing in-person supervision by human factors experts during investigations.

Ability to Collect Valid Communications Information

Investigating Officers were asked to rate the validity and accuracy of the information they received pertaining to the contribution of communications to the casualties they investigated. These ratings were provided for 102 cases in which communications was investigated. Among these cases, average ratings were 3.9 on a scale of 1 (not at all true and accurate) to 5 (extremely true and accurate). On average, IOs judged the information upon which their reports were based to be moderately valid and accurate.

Value of Feedback to Marine Safety Offices

Marine Safety Officers received feedback on their performance during the study in three different ways: (1) on-site visits and presentations, (2) the *Marine Investigator* newsletter, and (3) a summary sheet of comments and questions on casualty cases. On-site briefings were always well attended, involving lively discussions of investigation and reporting pitfalls and strategies for success. All assessment survey respondents indicated having received a copy of the newsletter. On a scale of 1 (poor) to 5 (excellent), ratings of the newsletter ranged from 3.3 to 4.0, indicating that the IOs found the newsletter useful for keeping current with the status of the study, summarizing the latest procedures to use, and answering specific concerns and questions. Overall, we believe the feedback mechanisms employed in the present study were successful in establishing and maintaining IO involvement. Further, it is our view that the key to the success of the feedback to the MSOs was that it provided ongoing evidence that the IOs were directly contributing to the meaningful analysis of marine casualties.

Perceived Benefits of Study

One of the questions on the final survey addressed the potential benefits of this study to the IO and the USCG. With respect to benefits to the individual IOs, most respondents said the study gave them a heightened awareness of the potential contribution of communications to casualties. Several IOs also said the experience of participating in the study would prompt them to investigate communications more thoroughly in the future. With respect to benefits to the USCG, IOs mentioned that the investigations for this study were more thorough than they would have been if communications had not been a focus.

Time Demands on Investigating Officers

As part of the reporting process, IOs were asked to indicate the time spent investigating potential communications problems and completing the reporting forms. Estimates of the additional time required for the procedures used in this study are based on the medians (50th percentiles) of the IO estimates, shown in Figure F-1. For the 482 cases in which communications was not investigated, the median investigation time was 10 minutes and the form completion time was 10 minutes. For the 107 cases in which communications was investigated, the median investigation time was 60 minutes and the form completion time was 30 minutes. Across all 589 cases, the median investigation time was 25 minutes and form completion time was 10 minutes. Thus, our best estimate of the additional time spent by IOs in meeting the investigation and reporting
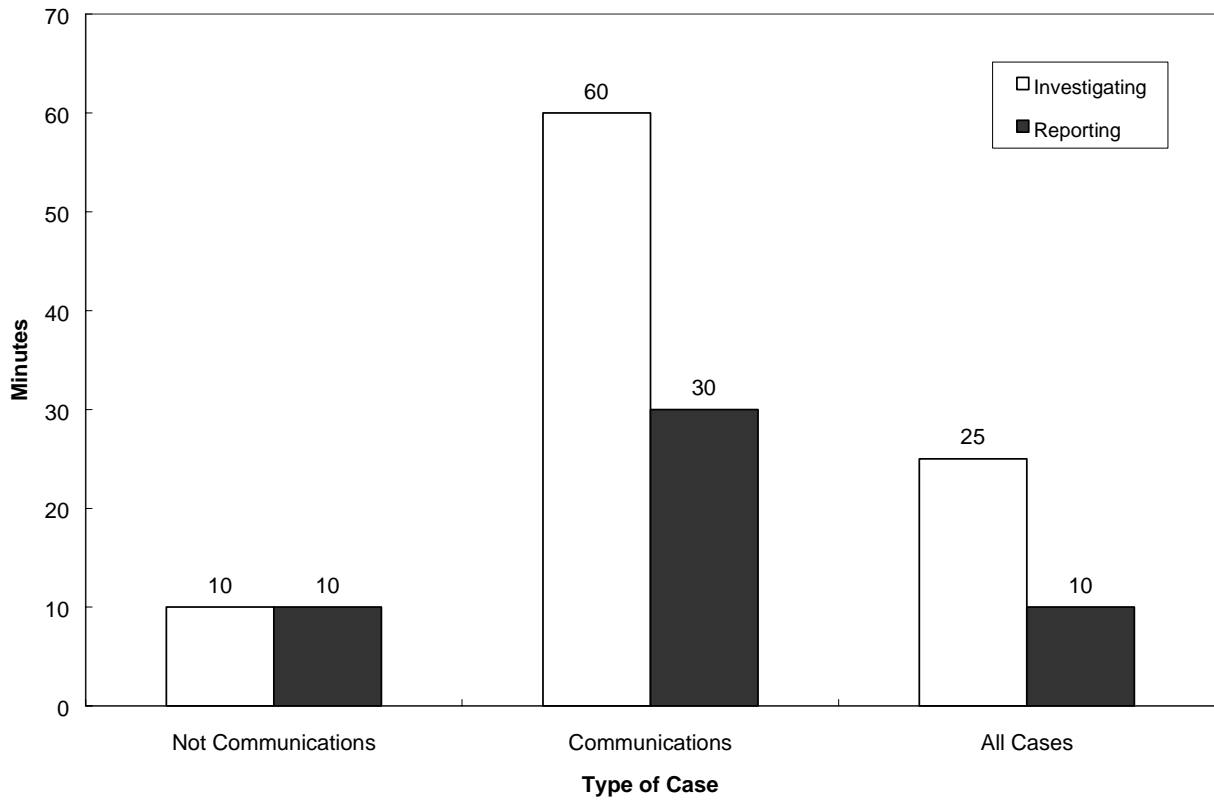
Figure B-1. Median estimated time for casualty case investigation and reporting.

USCG Communications Casualty Investigations Project

MSO Assessment Questionnaire

For the past six to eight months, you have been asked to participate in a project on the investigation and reporting of communications-related information.

This questionnaire is designed to provide you with an opportunity to present your comments and suggestions in regards to the value of this approach to the investigation of human factors and communications-related information.

To facilitate your task when completing this questionnaire, we have attached copies of a) the newsletters, b) the instructions, c) the Casualty Screening and Background Form, and d) the five Communications Reporting Forms.

Your responses are valuable to provide future directions to this project and, as such, your participation is greatly appreciated! Thank you!

1. Background Information

1.1 MSO: ❏ NEWMS ❏ NYCMI ❏ PADMS ❏ PORMS

1.2 Name of Investigating Officer: _____

1.3 Rank: _____

1.4 Position: _____

1.5 When were you assigned to this investigation office?   ___/___/___
 mm / dd / yy

1.6 When did you initially get involved with this project?   ___/___/___
 mm / dd / yy

1.7 Approximately how many vessel and personnel injury casualties were assigned to you between September 1st, 1997 and March 31st, 1998? _____

1.8 For approximately how many vessel and personnel injury casualties did you complete the Communications investigations forms (*Casualty Screening and Background form and Communications Reporting Forms*) between September 1st, 1997 and March 31st, 1998?_____

2. Training and Support Materials

2.1 Did you receive the full-day training provided by project staff at your office?

❐ Yes   ❐ No   *If yes, how would you rate this training on:*

	Poor 1	2	3	4	Excellent 5
a) Explaining why you were completing forms	❐	❐	❐	❐	❐
b) Describing what information you needed to collect	❐	❐	❐	❐	❐
c) Describing how to complete the forms	❐	❐	❐	❐	❐
d) Preparing you for this new role in your job	❐	❐	❐	❐	❐
e) Other _____	❐	❐	❐	❐	❐

2.1b Overall, was the full day training provided by project staff useful or needed?

_____

1   2   3   4   5

not useful at all   extremely useful

If you completed this item, please go to item 2.4.

2.2 If you did not receive the initial training provided by project staff, did you receive any training from your co-workers or supervisors at your office?

❐ Yes   ❐ No   *If yes, please describe the training received:* _____

_____

_____

If yes, how would you rate this training on:

	Poor 1	2	3	4	Excellent 5
a) Explaining why you were completing forms	❐	❐	❐	❐	❐
b) Describing what information you needed to collect	❐	❐	❐	❐	❐
c) Describing how to complete the forms	❐	❐	❐	❐	❐
d) Preparing you for this new role in your job	❐	❐	❐	❐	❐
e) Other _____	❐	❐	❐	❐	❐

If you completed this item, please go to item 2.4.

2.3 a) If you received neither training from project staff nor training from your co-workers or supervisors at your office, how did you acquire the information necessary to complete the project requirements?

b) How would you rate the information that you have acquired in preparing you for this new role in your job?

Poor				Excellent
1	2	3	4	5
❒	❒	❒	❒	❒

2.4 Please provide any recommendations you have for improving the training. Possible items of discussion are: a) content of information presented; b) handouts format in regards to refresher training; c) providing a videotaped training session to replace missed training.

_____

_____

_____

_____

_____

_____

2.5 Did you receive a copy of the instructions for completing the forms?

❒ Yes ❒ No *If yes, please complete the following:*

	Never	Occas-sionally	About Half the Time	Usually	Always
a) How frequently did you use the instructions during your investigation?	❒	❒	❒	❒	❒
b) How frequently did you use the instructions during the preparation of the reporting forms?	❒	❒	❒	❒	❒

If you used the instructions, how would you rate these instructions on:

	Poor				Excellent
	1	2	3	4	5
a) Ease of use	❒	❒	❒	❒	❒
b) Value in conducting the investigation	❒	❒	❒	❒	❒
c) Value in completing the forms	❒	❒	❒	❒	❒

2.6 Did you receive one or more copies of the newsletter, the *Marine Investigator* (attached)?

❒ Yes ❒ No *If yes, how would you rate the newsletter on:*

	Poor				Excellent
	1	2	3	4	5
a) Keeping you up-to-date with the project	❒	❒	❒	❒	❒
b) Summarizing the latest procedures to use	❒	❒	❒	❒	❒
c) Answering your concerns and questions	❒	❒	❒	❒	❒

2.7 Overall, was the newsletter '*Marine Investigator*' useful? _____

<div align="center">

1   2   3   4   5

not useful at all   extremely useful

</div>

3. Investigation and Procedures Forms

3.1 What is your understanding of the basic purpose of this project?

_____

_____

_____

3.2 What is your understanding of the purpose of the *Casualty Screening and Background Form* (attached)?

_____

_____

3.3 In completing your investigations for *Casualty Screening and Background Form*, what information did you use to assess whether a casualty was HF-related or not?

_____

_____

3.4 How would you rate the Format of the *Casualty Screening and Background Form* in regards to:

	Poor				**Excellent**
	1	**2**	**3**	**4**	**5**
a) Ease of use	❒	❒	❒	❒	❒
b) Contribution to quality of investigation	❒	❒	❒	❒	❒

3.5 Any suggestions for improvements to the *Casualty Screening and Background Form*:

_____

_____

3.6 What is your understanding of the purpose of the *Communications Reporting Forms* (attached)?

_____

_____

_____

3.7 Which criteria/information did you use to determine if a casualty was communications-related or not?

_____

_____

_____

3.8 How would you rate the Format of *Communications Reporting Forms* in regards to:

	Poor 1	2	3	4	Excellent 5
a) Ease of use	❏	❏	❏	❏	❏
b) Determining communications factors	❏	❏	❏	❏	❏
b) Contribution to quality of investigation	❏	❏	❏	❏	❏

3.9a When it was required in a casualty case, what percentage of time were you able to contact (e.g., phone or on site) the individual(s) directly involved in the casualty? _____%

3.9b How many phone calls did you have to make, on average, in order to reach the individuals directly involved in the casualty? _____

3.10 You spent additional time to fulfill the requirements of this project. We would like to know the averaged time spent on the following tasks: **Averaged Time Spent**

a) Establishing contact with the individual(s) involved by phone or in person _____

b) Verifying the events leading up to the casualty _____

c) Finding out if communications was an issue and a contributing factor to the casualty _____

d) Finding out which factors contributed to the communications breakdown _____

e) Other_____ _____

3.11 In terms of investigating for communications breakdowns, did you feel that the *Communications Reporting Forms* were incomplete?

❏ Yes   ❏ No   *If so, what additional information should have been collected?*

3.12 Any suggestions for other improvements to the *Casualty Screening and Background Form* and the *Communications Reporting Forms*?

_____

_____

3.13 Overall, what do you think of the 2-step (*Casualty Screening and Background Form* and *Communications Reporting Forms*) approach to the investigation of communications-related information?

Not useful at all	Not very useful	Useful	Very useful	Extremely useful
❏	❏	❏	❏	❏

Please explain why: _____

_____

4. Benefits and Costs Associated with this Project

4.1 List the benefits, if any, to **you** and the **USCG** of participating in this project:

a) Benefits to you	1. _____
	2. _____
	3. _____
b) Benefits to USCG	1. _____
	2. _____
	3._____

4.2 List the disadvantages, if any, to **you** and the **USCG** of participating in this project:

a) Disadvantages to you	1. _____
	2._____
	3._____
b) Disadvantages to USCG	1._____
	2._____
	3._____

4.3 As of April 1st, 1998, the data collection for this project was terminated, and the forms were no longer required to be filled out. Since then, have you incorporated any of the procedures or forms from this project into your routine investigation of new casualties?

❏ Yes   ❏ No

If yes, which elements of the procedures or forms have you been using: _____

_____

_____

If you answered no, indicate why you choose not to use the procedures and forms to the investigation of new casualties: _____

_____

5. Recommendations for Improvement

5.1 How would you rate the value of this approach (procedures and forms) in regards to:

	Poor 1	2	3	4	Excellent 5
a) investigating communications information	❏	❏	❏	❏	❏
b) reporting communications information	❏	❏	❏	❏	❏

5.2 If this information was collected by all Marine Safety Offices for a period of 1 year, how would you consider the ability of this information to enable **you** or the **USCG** to:

	Poor 1	2	3	4	Excellent 5
a) evaluate whether communications was a potential factor to a casualty	❏	❏	❏	❏	❏
b) identify the type (process problem) of communications breakdown	❏	❏	❏	❏	❏
c) identify all the factors contributing to the communications breakdown	❏	❏	❏	❏	❏
d) determine if a casualty was caused by a communications breakdown	❏	❏	❏	❏	❏
e) determine to what extent communications breakdowns occur in the maritime industry	❏	❏	❏	❏	❏
f) enhance the investigation of communications-related factors	❏	❏	❏	❏	❏
g) enhance the investigation of human factors causes of casualties	❏	❏	❏	❏	❏

5.3 Any suggestions for improvements to the investigation and reporting of Human Factors information?

_____

_____

5.4 Any suggestions for improvements to the investigation and reporting of Communications-related information?

_____

_____

5.5 Any suggestions for improvements to the entire process?

_____

_____

5.6 In your opinion, should this approach for investigating communications be expanded to all Marine Safety Office(s) for a longer duration?

❒ Yes   ❒ No   ❒ Uncertain

Why? _____

_____

5.7 In your opinion, should this approach be expanded to cover additional human factors topics?

❒ Yes   ❒ No   ❒ Uncertain

Why? _____

_____

If so, which human factors topic would you recommend as the next project?

5.8 Please note anything that you feel is important in regards to this project but has not been addressed by this survey.

_____

_____

_____

_____

_____

_____

We recognize the burden that we have imposed on you over the last 9 months and we would like to thank you and mention that we have appreciated your collaboration and efforts in this project.

Thank you!
Marvin and Mireille as well as Anita, Myriam, and Brooke from the USCG R&D

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